INFORMATION PAPER

Tungsten Study at Camp Edwards

Small Arms Range Tungsten Evaluation

Scientists collecting samples on berm face and trough areas at Camp Edwards.

The U.S. Army Environmental Command(USAEC) has begun a first-of-its-kind study to determine how tungsten interacts with the environment on small arms ranges at Army installations. The primary focus of the study is the Army's tungsten nylon bullet, an alternative to the traditional 5.56 mm lead round.

In 1999 the Massachusetts Military Reservation (MMR) became the first military installation to use the tungsten nylon bullet. Since then the bullet has been used on twelve ranges at the Massachusetts National Guard's Camp Edwards, which is located on MMR. The study is being conducted at three of these ranges based on the greatest number of rounds fired, the presence of berms, and the distance from the firing point to the berm.

The study assesses the mobility of tungsten, as well as lead and other small arms munitions metal constituents in the presence of tungsten, and characterizes the distribution of tungsten in the soil. A team of scientists is collecting samples of surface and sub-surface soil from various points on each range including the firing point, range floor, target area, trough, and primary impact berm.

The study also includes testing of Camp Edward's water sources through samples taken of groundwater and the water that filters down through the soil. Groundwater wells located down-gradient to the selected ranges and background wells will be monitored quarterly. In addition, periodic monitoring will be conducted of the water that seeps below the surface of the soil, using lysimeters placed at each range as well as two background locations. The lysimeters are used to draw water from between the soil particles into an enclosed cup for collection and analysis.

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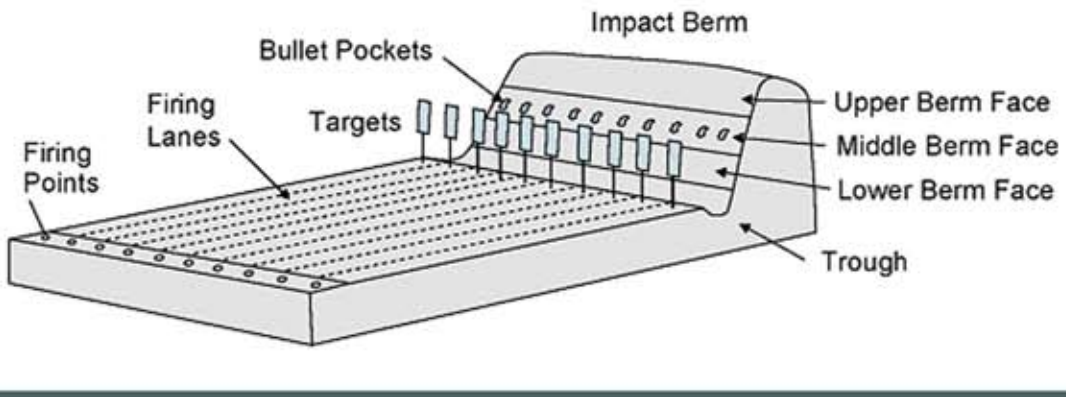
Upon completion of the Camp Edwards study, two additional military installations will be chosen for evaluation based on frequency of tungsten nylon bullet usage, soil type, and climatic conditions. Each additional study will take approximately one year to complete, allowing adequate time for sampling, analysis, and release of a final report. Sampling at these two additional sites will be similar to the Camp Edwards plan, with minor adjustments to account for site variations.

The program is being funded by USAEC and implemented by the U.S. Army Engineer Research and Development Center. A final report for the Camp Edwards study will be completed in the fall of 2006, followed by reports for sites 2 and 3 in the fall of 2007 and 2008.

Range at Camp Edwards showing firing points, targets and primary impact berms.



Conceptual layout of a typical small arms firing range.